

THE INVENTION CLAIMED IS:

1. An apparatus for use in supporting a substrate carrier comprising:

an overhead transfer flange adapted to couple to
5 a substrate carrier body and an overhead carrier support, the overhead transfer flange having:

a first side; and

a second side opposite the first side that
is wider than the first side.

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2. The apparatus of claim 1 wherein the overhead transfer flange includes a third side and a fourth side that each extend from the first side to the second side.

15 3. The apparatus of claim 2 wherein the third side and the fourth side are separated by an angle of about 60 degrees.

20 4. The apparatus of claim 2 wherein the third side and the fourth side each includes an engagement feature adapted to engage supporting features of the overhead carrier support.

25 5. The apparatus of claim 4 wherein the engagement features are blades.

6. The apparatus of claim 5 wherein each blade has a blunted blade edge.

30 7. The apparatus of claim 6 wherein each blade has a radiused blade edge.

8. The apparatus of claim 5 wherein:

the blade of the third side of the overhead transfer flange has a surface that is angled so as to mate with an angled surface of a first supporting feature of the overhead carrier support; and

5 the blade of the fourth side of the overhead transfer flange has a surface that is angled so as to mate with an angled surface of a second supporting feature of the overhead carrier support.

10 9. A substrate carrier comprising:

 a substrate carrier body adapted to support one or more substrates; and

 an overhead transfer flange coupled to the substrate carrier body and adapted to couple to an overhead carrier support, the overhead transfer flange having:

 a first side; and

 a second side opposite the first side that is wider than the first side.

20 10. The apparatus of claim 9 wherein the overhead transfer flange includes a third side and a fourth side that each extend from the first side to the second side.

25 11. The apparatus of claim 10 wherein the third side and the fourth side each includes an engagement feature adapted to engage supporting features of the overhead carrier support.

 12. The apparatus of claim 11 wherein the engagement features are blades.

30 13. The apparatus of claim 12 wherein:
 the blade of the third side of the overhead transfer flange has a surface that is angled so as to mate with

an angled surface of a first supporting feature of the overhead carrier support; and

the blade of the fourth side of the overhead transfer flange has a surface that is angled so as to mate with
5 an angled surface of a second supporting feature of the overhead carrier support.

14. An apparatus for use in supporting a substrate carrier comprising:

10 an overhead carrier support adapted to suspend a substrate carrier via an overhead transfer flange, the overhead carrier support having:

a first side; and

a second side opposite the first side that
15 is wider than the first side.

15. The apparatus of claim 14 wherein the overhead carrier support includes a third side and a fourth side that each extend from the first side to the second side.

20 16. The apparatus of claim 15 wherein the third side and the fourth side are separated by an angle of about 60 degrees.

25 17. The apparatus of claim 15 wherein the third side and the fourth side each includes a supporting feature adapted to support an engagement feature of the overhead transfer flange.

30 18. The apparatus of claim 17 wherein the supporting features are channels adapted to engage blades of the overhead transfer flange.

19. The apparatus of claim 18 wherein:

the channel of the third side of the overhead carrier support has a surface that is angled so as to mate with an angled surface of a first blade of the overhead transfer flange; and

the channel of the fourth side of the overhead carrier support has a surface that is angled so as to mate with an angled surface of a second blade of the overhead transfer flange.

20. The apparatus of claim 19 wherein the channel of the third side and the channel of the fourth side are separated by an angle of about 60 degrees.

21. The apparatus of claim 14 wherein the overhead carrier support is adapted to couple to an overhead conveyor system for use in transporting substrates within a semiconductor device fabrication facility.

22. The apparatus of claim 14 wherein the overhead carrier support is adapted to couple to a storage shelf for use in storing substrates within a semiconductor device fabrication facility.

23. The apparatus of claim 14 wherein the overhead carrier support is adapted to support a substrate carrier during at least one of docking of the substrate carrier to a loadport of a processing tool and undocking of the substrate carrier from the loadport of the processing tool.

24. A method of supporting a substrate carrier comprising:

providing a substrate carrier having:

a substrate carrier body adapted to support one or more substrates; and

an overhead transfer flange coupled to the substrate carrier body and adapted to couple with an overhead carrier support, the overhead transfer flange having:

a first side; and

a second side opposite the first side that is wider than the first side;

providing an overhead carrier support adapted to suspend the substrate carrier via the overhead transfer flange, the overhead carrier support having:

a first side; and

a second side opposite the first side that is wider than the first side; and

coupling the overhead transfer flange and the overhead carrier support so as to support the substrate carrier.

25. The method of claim 24 wherein coupling the overhead transfer flange and the overhead carrier support comprises:

raising at least a top of the overhead transfer flange above a bottom of the overhead carrier support; and

lowering the overhead transfer flange into engagement with the overhead carrier support.

26. The method of claim 25 wherein raising at least a top of the overhead transfer flange above a bottom of the overhead carrier support comprises raising the overhead transfer flange so that a footprint of the overhead transfer flange overlaps a footprint of the overhead carrier support while the overhead transfer flange is being raised.

27. The method of claim 24 wherein the overhead carrier support is coupled to an overhead conveyor system for use in transporting substrates within a semiconductor device
5 fabrication facility.

28. The method of claim 24 wherein the overhead carrier support is coupled to a storage shelf for use in storing substrates within a semiconductor device fabrication
10 facility.